



Herbarium Wins Oak Spring Garden Foundation Grant

I am excited to announce that the Herbarium has received a major grant from the Oak Spring Garden Foundation this summer to fund our ongoing post-baccalaureate fellowship program.

We are delighted to have Shelby Meckstroth, C'17, join us this year as our Herbarium fellow.

Shelby graduated last year as an ecology and biodiversity major and conducted Honors research with me examining how physiological integration and phenotypic plasticity allow the dune plant, *Hydrocotyle bonariensis*, to ameliorate the effects of grazing and sand burial. She was a participant in the 2015 Field Study in Belize



program and spent a semester studying abroad in Chile. As part of her Fellowship, she will be assisting with plant conservation initiatives across the state in association with the Tennessee Plant Conservation Alliance. She will also be involved with my collaborative research project on the spatial genetic structure of hill cane, *Arundinaria appalachiana*, on the Cumberland Plateau. Shelby will be based in the Herbarium and will help oversee the NSF-funded digitization of our collection. Come by and say hi to her when you are in Spencer Hall.

—Jon Evans

Plateau Vernal Pools Paper Published!

For the past 15 years, I have been involved in an effort to promote the ecological significance of vernal pools on the Cumberland Plateau. Vernal pools are small, ephemeral wetlands that act as distinct aquatic "islands" of biodiversity dispersed across the upland landscape of the region. Specifically, many amphibian species in the region are dependent on the maintenance of these pools within the surrounding terrestrial habitat in order to complete their complex life cycles. Because vernal pools are small in size (generally less than 0.5 ha), they are often overlooked in land management decisions, which means that wetland loss is coupled with forest loss in this region.

It has been clear to me for a while that the critical first step in establishing protection for these pools was to generate a database that documented their existence and to evaluate how the wetlands are being impacted by changing land-use. My recent publication in the journal *Wetlands*, titled *Widespread Degradation of a Vernal Pool Network in the*

Southeastern United States: Challenges to Current and Future Management, represents a culmination of this work. Co-authors on this paper are Kristen Cecala and David Haskell from biology, Brett Scheffers, C'05, from University of Florida, Nick Hollingshead, my former manager of the Landscape Analysis Lab, Callie Oldfield, C'15, at University of Georgia, and recent graduate Ben McKenzie, C'17.

Using high resolution, leaf-off imagery, we mapped the locations and surrounding forest cover of 2,399 vernal pools on the Cumberland Plateau across a 719,540 ha, three-state study area (Tennessee, Alabama, Georgia) and assessed habitat loss and conservation status. Most of pools (93 percent) were located on unprotected lands and only 37 percent of these pools had a native forest cover greater than 75 percent within a 300m buffer. Forest cover around pools steadily declined between 1981 and 2010. In the absence of effective federal or state policies to protect the terrestrial and

aquatic habitats associated with pools on private land, these wetlands will continue to become more disconnected and lose their ecological integrity within the landscape.

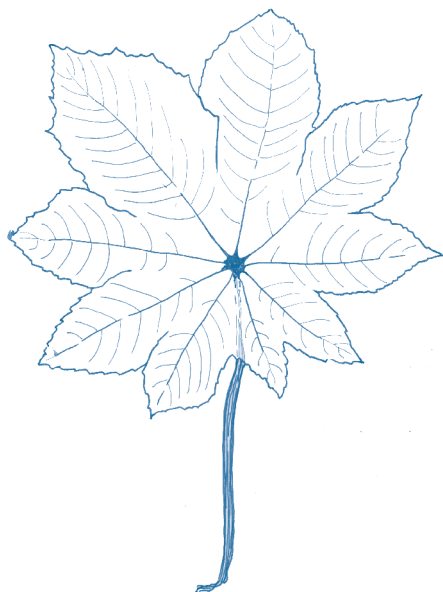
This paper comes at a critical time for wetlands protection in this country. Under the 2015 Clean Water Rule produced by the EPA, our paper would help qualify this newly identified network of pools for special protection under the Clean Water Act. Such future protection, however, has been put in jeopardy by a recent EPA decision under the current administration to suspend and rescind the Clean Water Rule.

—Jon Evans

Evans, J.P., K. K. Cecala, B. R. Scheffers, C.A. Oldfield, N. Hollingshead, D. Haskell, and B. McKenzie. 2017. Widespread degradation of vernal pools in the southeastern United States: Challenges to current and future management. *Wetlands* doi:10.1007/s13157-017-0943-z

Establishing a Herbarium in Haiti

(Ed. Note: This past summer, Cal Oakley was Sewanee's first Sommer-Speck Environmental Studies summer intern, and Bre Ayala Sewanee's first Partners in Health intern, the latter funded through Sewanee's Office of Civic Engagement. Their projects were guided by Biology Professor Deb McGrath. Here Cal describes their shared experience in setting up a new herbarium in Haiti.)



This past summer, Bre Ayala, C'17, and I travelled to Haiti's Plateau Central to interview farmers to learn which local plants they use as medicine. The goal of our project was to identify each species (at least to genus), document which plants are used for what illnesses or ailments, and then to collect and press specimens for the most widely mentioned species with the goal of beginning a herbarium at the Centre de Formation Fritz Lafontant (CFFL). This information is crucial, as many people living in rural areas can't access or afford to visit a hospital and so rely heavily on natural remedies and medicinal plants to treat basic ailments such as a cold or headache.

Bre interviewed the families in six households in both villages in which we conducted our studies, Bois Jolie and Morne Michel. In total, she recorded the Creole names for more than 80 different medicinal plants. From this list, we chose the most commonly used plants to target and then collected these as we encountered them in the field. The farmers and agronomists we worked with were indispensable. Their knowledge of where to find all these plants made collecting a breeze. Without their help, our task would

have been exceedingly difficult and, potentially, impossible.

The language barrier was a challenge for us the entire time we were in Haiti, but it was especially frustrating when trying to identify Haitian plants. Many of those that we found have multiple names or multiple spellings for Creole names, which makes using online resources tricky. So we relied primarily on what little literature we'd found on Haitian flora, our Haitian partners' translations, and the identification skills I'd learned taking Plant Systematics at Sewanee under Dr. Jon Evans.

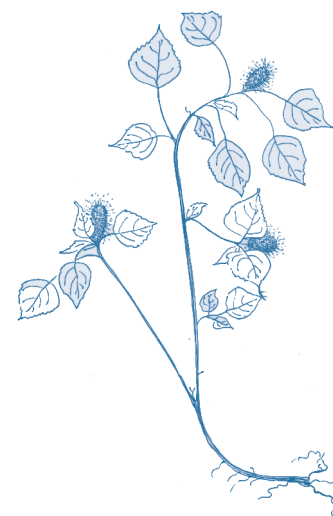
By the time our research in Haiti came to an end, Bre and I had identified, pressed, and mounted 24 different species of plants from 17 different families. The specimens were given the full herbarium treatment: labelling and sorting into folders by family. Currently all 24 specimens are being housed in a lab at CFFL under the care of our agronomist partners and are the beginning of CFFL's own teaching herbarium. CFFL trains students in agronomy and related fields, so having their own herbarium on site is extremely helpful as a teaching tool. The current goal for the collection is to continue its growth through the efforts of CFFL students in identifying, collecting, and mounting other local plants, beginning with those with medicinal properties and expanding to include as many local plant species as possible.

Working on creating this herbarium was an incredibly gratifying experience

for me. The highlight of the whole adventure was showing our mounted and labeled specimens to our Haitian agronomist partners. They were over the moon with our specimens and incredibly eager to continue growing the herbarium and to share it with current students at CFFL. Without the help of our Haitian team, most of our work would have been impossible. Their helpfulness, enthusiasm, and interest were all essential driving forces of our work this summer. I can't wait to hear from them about how the herbarium grows.

—Cal Oakley, C'19

Cal did the drawings that accompany this article. The leaf is from *Ricinis communis*, Haitian Castor Bean, a shrub whose leaves and oil are used in drinks to treat constipation and joint pain. *Acalypha alopecuroidea*, a small herbaceous plant, is called Foxtail Copperleaf. Its leaves are brewed into a tea to treat stomachaches and constipation.



Friends of the Sewanee Herbarium

The Friends of the Sewanee Herbarium support the work of the Herbarium: education, research, and conservation. A \$10 annual contribution would be very much appreciated. The date of your most recent contribution is printed on your address label.

Name and address (if different from that on the mailing label on the back):

Amount enclosed: \$10 Other: \$ _____

Please mail checks (made payable to The University of the South) to:

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Fall Calendar of Events

Mountain Goat Trail Wildflower Walk Sat., Sept. 9, 1 p.m., Yolande Gottfried

Meet at the trailhead at the intersection of Hawkins Lane and Hwy. 41-A (the Gardeners' Market area). Late summer wildflowers are in bloom. Time and distance will be determined by the participants. This is an easy paved trail—see mountaingoattrail.org for more information on the trail.

IONA: Art Sanctuary Readings Fri., Sept. 22, 5 p.m., Yolande Gottfried and Tues., Oct. 31, 5 p.m. Robin Gottfried

Yolande and Robin have been invited to join other contributors at these readings. Yolande will share some of her Nature Notes. Robin will read from various writings on nature and religion. The reading is free and all are welcome. IONA: Art Sanctuary is located off Tennessee Hwy. 56 South, on Garnertown Road, 2.8 miles outside of Sewanee, Tennessee.

Abbo's Alley Sat., Oct. 7, 2:30 p.m., Mary Priestley and Yolande Gottfried

A Family Weekend tradition! (But note change in meeting time.) Meet at the corner of University and Georgia Avenues (at the flashing light) near the arboretum kiosk for this one-hour easy walk in the Abbott Cotten Martin Ravine Garden. The Garden is a lovely mix of native and cultivated plants, and the ravine is steeped in Sewanee history. There are a surprising number of things to see and learn on this familiar trail. All are welcome to join in the walk.

A Place on the Domain—First in a Series of “Plant Presentations”

Wed. Nov. 8, 7 p.m., Jon Evans

This presentation will trace the complex natural and cultural history of a 30-acre tract known as the “King Farm” on the Domain. This site was the location of one of the first homesteads in the Sewanee area in the early 1800s and the talk will reveal a 200-year progression of different land uses that occurred at this improbable, remote place and how this unique land use history shaped the forest that we see there today. Meet in Spencer 172 (building entrance across from duPont Library, then first hallway on the left).

Botanical Watercolor Workshop Sat., Nov. 11, 9 a.m., Jack Baggenstoss

Meet at the Sewanee Herbarium for a morning of watercolor painting indoors with this accomplished artist whose work may be seen at the South Cumberland State Park Visitors' Center among other places. The workshop is free and open to people of any experience level and participants are encouraged to take more or less instruction as they choose. Bring your own materials.

Nature Journaling

A group meets for nature journaling Thursday mornings 9–11. Come try it out—stick with it if you like. Bring an unlined journal (or a few sheets of unlined paper) and a pen or pencil. No experience needed. As the seasons transition, we gather in different places, so email marypriestley@bellsouth.net for info on the meeting place.

All times are CST or CDT. Wear appropriate shoes on all of these walks. Risks involved in hiking include physical exertion, rough terrain, forces of nature, and other hazards not present in everyday life. Picking flowers and digging plants are prohibited in all of the above-mentioned natural areas.

THE SEWANEE PLANT PRESS

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COMPOSITOR

Tammy Elliott

Drawings, by Mary Priestley, are of woody plants often associated with vernal pools: buttonbush, red maple, and blackgum.

HERBARIUM PUBLICATIONS

Fiery Gizzard: Voices from the Wilderness
What If Trees Could Walk?
Trail Guide to Shakerag Hollow

HERBARIUM BLOG

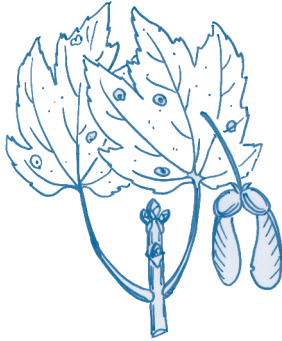
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The Herbarium's work with the ATO Fraternity to restore and maintain the ATO Spring and its environs reached a landmark this fall. University Chaplain Tom Macfie highlighted the effort in a sermon at All Saints' Chapel and invited congregants to stroll down to the spring to see it for themselves. While celebrating real improvements there, we all recognize this as an on-going project and our collaboration with the fraternity continues. Email Drew Carpenter, the

Collaborations with the ATO Fraternity, Stirling's Coffeehouse, and the University Farm

fraternity's Keeper of the Grounds, at Andrew.T.Carpenter@sewanee.edu for more information.

As part of our effort to increase plant awareness on campus and within the community, the Herbarium is sponsoring a botanical art show titled *All Things Bright and Beautiful*. It will be on display for the month of January 2018, at Stirling's Coffeehouse. We welcome any and all wall art that features plants—painting, drawing, photography, stitchery, multimedia, low relief sculpture—anything that can be hung on the wall. Please consider this your invitation to participate. Pieces may be offered for sale or not—the artist's choice. Our hope is to gather an array of works from people of all ages, artistic "ability," and segments of the community who share a common interest in plants and their beauty.

For more information, get in touch with Mary Priestley.

Emily Heid, C'17, is a new Vista volunteer attached to the University Farm. With the title of specialty crop economic development coordinator, she is creating a farm cooperative focused on the production of herbs and spices with the goal of marketing and selling a line of Appalachian branded teas. She has reached out to the Herbarium, and we look forward to partnering with the University Farm in this new venture. For more information email Emily at sewaneevistaspec@gmail.com.



—Mary Priestley